

COLMAN'S RURAL WORLD

Established 1848.

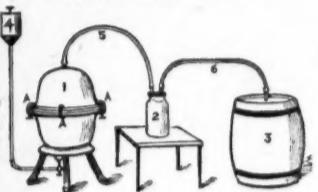
Sorgo Department.

National Sugar Growers' Association.

OFFICERS FOR 1884.

President—Norman J. Colman, St. Louis, Mo.
Vice Presidents—Capt. R. Blakely, Minnesota; D. F. Kenner, Louisiana; X. K. Stouts, Kansas; A. Furnas, Indiana; C. F. Clarkson, Iowa; A. J. Decker, Wisconsin; A. G. Williams, New York; Dr. E. F. Newberry, Illinois; Secretary—F. A. Gillespie, Edgewater, Illinois; Treasurer—J. A. Field, St. Louis, Mo.

Machine for Making Sulphurous Acid Solution and Bisulphite of Lime.



Retort. 4—Gasolene Stove.
5—Wash Bottle. 5 and 6—Rubber Hose.
3—Btl. Lime Water. 6—A A—Camps.

The retort is cast-iron and weighs 200 pounds. The gasolene bottle shown in the cut. There is no safety tube shown in the cut. When the gasolene stove is used to heat the retort, it is not essential, as there is no withdrawal of heat till you turn off the gasoline.

Daniel Root, of Hudson, Mich., will furnish the machine complete, with directions how to use it, at a small per cent, above cost, to any one wishing to make pure sulphurous acid solution and bisulphite of lime.

Most sugar-makers use sulphurous acid in some form in cane juice, in connection with lime, to defecate. Some use sulphur fumes, that forms sulphurous acid in cane juice. Others use bisulphite of lime. Some use Stewart's powder B, or something else.

In using sulphur fumes it is difficult to tell just how the acid is formed in the cane juice; if you get too much on the lighter horse does not work well, the molasses will not be good flavored. But, if you have good sulphurous acid solution or bisulphite of lime, you can use little or much, as you wish, with best of results. And by using a little acid in the juice after defecating with lime, the molasses will be light colored and good flavored.

Lime or No Lime—Folger to Anderson.

EDITOR RURAL WORLD: In your valuable paper of the 17th ult., I find another interesting article from W. L. Anderson, and in reply, I will say that Mr. Anderson does not exactly understand my position. I do not say, and never did say, in any published article, that "better sugar and finer syrup can be made without chemicals than with them." I simply stated and may still state, that the earliest document possible a copy of the specifications registered at the patent office. The inventors are Carl Daniel Eckman of Bergvik, Sweden, now 57-1 Old Broad Street, London; William Bankroft Espeut, of Jamaica, now 14 Southwick Street, London; and George Fry, of 57-1 Old Broad Street, London, and their names as "Eckman-Fry-Espeut Process."

THE SPECIFICATIONS.

These are registered under the title, "Improvements in the Extraction of Saccharine Matter from Vegetable Substances," and are as follows:

The object of this invention is to extract from sugar-cane and other vegetable substances a larger proportion of the saccharine matter which they contain, obtained by methods commonly practiced, and also to avoid the use of sulphur fumes.

"Solutions containing more base than the quantity equivalent to the sulphurous acid present may also, in some cases, be used with success (for instance when the juice of the cane or plant treated is acid.)

"The base which we have found most advantageous is magnesia, but other suitable bases, such as soda and potash, may also be used.

"In treating a raw material, regard must be had to its character and condition. If a substance be hard and compact, it will require a higher pressure to effect the same amount of disintegration and consequent amount of extraction of the saccharine matter. The use of steam, pressure, the duration of the boiling will have an effect in promoting more complete extraction under similar conditions; acid sulphites have also a tendency to disintegrate plants more rapidly than normal sulphites. But, on the other hand, it must be borne in mind that high temperatures, acid solutions, and long boiling have both separately and jointly a tendency to invert, and, carried to extremes, to destroy sugar. In operating, therefore, some judgment must be exercised in order to obtain the best results. Although we have described the particular base, the quantity and proportion of chemicals, and the amount and duration of the process with which we have obtained the best results, it will be understood that these conditions may, as we have indicated, be varied as in practice may be found requisite, but what we claim as our invention is: The manufacture of sugar from vegetable substances, by boiling under pressure, with a solution containing sulphurous acid, and a base of alkali substantially as described."

RESULTS OF THE INVENTION.

The process has been tried in this country with results which justify the most sanguine expectations, especially when it is adopted of a large scale and with fresh cane. From one ton of cane 269 pounds or 12 per cent of sugar—sam-

claimed, in either of my articles, that it takes my machinery to produce the results referred to, I will invite all who use no "lime" to join in the exhibit, no matter what machinery they use, just so they use no lime.

If Mr. A. approves of this let him say so. The name and post-office address of each sample, regardless of the kind of pan used, simply stating fire pan, and made without lime or with "lime alone," and then the visitors can see and judge for themselves.

It has not been my object to advertise, when writing these articles, "to pay for that." I wrote the first article from a sense of duty, without knowing that a small unlabeled sample sold at good figures, "limed" syrup was a "drug" on the market. I do not deny though, that I had a mercenary object in view also, as I have lost heavily by men using lime, ruining their syrup so they could not sell it, and therefore could not meet their obligations.

I will now thank Mr. A., for his kind advice, and take back "Diana."

A. S. FOLGER.

Washington, Ia.

In reference to the publication of the proceedings of the last Convention of the National Sugar Growers' Association, we have to say that it was altogether a private enterprise, of which the association had no supervision. The fact that an important report was omitted in that publication, is therefore not chargeable to it or to its officers as such. The RURAL WORLD would gladly publish the report if sent us.

EDITOR RURAL WORLD: If agreeable, please copy the enclosed cutting in your widely circulated paper, the RURAL WORLD, so that your readers can understand what a little matter of free alcohol will do for the great sugar interest as asked by Mr. E. H. Dyer of California in his communication to me.

Mr. Dyer is the only successful manufacturer of beet root sugar in the United States, as yet. I am yours,

JAMES M. HART.

Oswego, N. Y.
The Sugar Interest.

The following letter is self-explanatory:

OFFICE OF STANDARD SUGAR REFINERY, ALBANY, CAL. MARCH, 1883.

James M. Hart, Esq., Oswego, N. Y.

DEAR SIR—I will be in Washington, D. C., about May 20th for the purpose of trying to induce congress to exempt alcohol from internal revenue tax that is distilled from beet root molasses, after these products of sugar have been obtained from it by the usual process of crystallization. I will be backed by letters from the most influential citizens of this coast to our delegation in congress, asking them to favor this measure, and I believe, if we exert ourselves at the time to procure the aid of the members of congress from their several states, we may succeed. If congress can be induced to do this the success of the business is assured. If you are disposed to assist in this move, prompt and energetic action is necessary. Please address me Ebbett House, Washington, D. C., and inform me of the result of your efforts. Truly yours,

E. H. DYER.

A Good Show.

EDITOR RURAL WORLD: I cannot congratulate you on the enlarged appearance of the reliable old RURAL WORLD. I am determined to try for a large list of subscribers this year. It rains and continues to rain. Farmers behind with work. A very good crop of fruit of all kinds here. New crop of pear and Irish potatoes on our table. After analysis of sample of sugar, my make, sent H. W. Wiley, Government Chemist, he sent me the following

Composition.

Per cent.

Crystallizable sugar..... 86.67

Uncrystallizable sugar..... 8.67

Molasses and undetermined..... 0.67

I intend to do better this year, making sugar and syrup. I want a partner who understands making syrup and sugar; one who will pay me \$150 for one-half interest in mill, evaporator, centrifugal and outfit generally. Wishing you long life and success to the old reliable farmers' paper, I am yours truly,

TAYLOR A. L.

Honey Grove, Texas, May 16th, '84.

Can you give me the address of H. O. Ames? I would like his pamphlet on sulphur fumes in cane juice.

Yours truly,

F. B. SHUBURNE.

Emporia, Kansas.

We have received a pamphlet setting forth the objects and purposes of the "United States Sugar Company" of New York. It carried into effect, the scheme will involve a test of the sorghum sugar industry on a larger scale than ever before attempted. The capital of the new company is one million dollars, and its offices are at No. 2 Exchange Court, New York.

The introductory page of the pamphlet reads as follows:

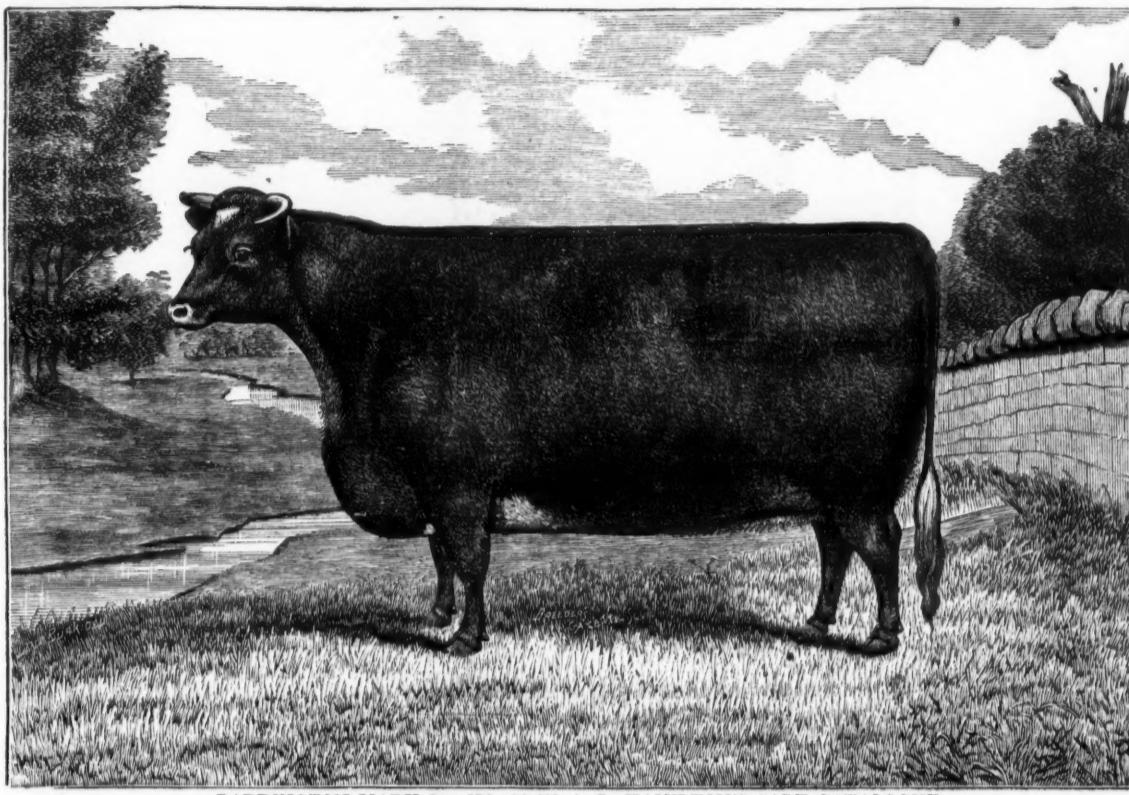
"The objects of the United States Sugar Company, are the growing of sorghum sugar cane and the production from the same, of seed, molasses and sugar.

"The Company propose to purchase sufficient land for one or more large plantations in suitable locations, and to erect the necessary works thereon.

"They have secured the inventions and processes of Peter Collier, Ph. D., late chemist of the United States Department of Agriculture, in reference to sorghum sugar production, and his ser-

ST. LOUIS, THURSDAY, MAY 29, 1884.

No. 22, Vol. XXXVII



BARRINGTON MARY 2ND NO. 50 IN A. L. HAMILTON'S SALE CATALOGUE.

cool, wet weather has tempted planting on soil unfertilized for the reception of seed and puts corn at a disadvantage from the start. Considering the present favorable condition of stock coupled with crop prospects to date, our farmers have no cause for complaint, but fair encouragement.

J. W. SANBORN, Sec.

Columbia, Mo., May 20.

Harrowing Corn.

It is useless to repeat the annual lesson to all good farmers. But there are yet a large number who do not believe in or practice harrowing corn. They may believe it is beneficial to harrow between the rows with a narrow harrow, or by taking out the center teeth and then straddling the row. But none of this is harrowing corn in the true and important sense. It needs a fine, slanting toothed harrow, then harrow so as to stir the soil in the hills and tear out the incipient weeds. With this kind of harrow begin the work as soon as the corn is planted and keep it stirring lively every day until the corn is large enough to stand turning the dirt to the hill with the cultivator. And do not be troubled about tearing up the corn, as there is but little danger of injury, even when it looks as if it were torn all to pieces. And do not fear harrowing too much. No soil can be harrowed yet, nor is there any probability of such an accident in the future. The harrow is really the greatest implement in making the corn crop and the patient has expired on the slanting toothed harrows, any one can have them without paying 200 per cent royalty.

Fine toothed harrows for corn can be made light, and very wide, with joints so that it will fit uneven ground. With a harrow twelve feet wide, an active team can go over thirty or forty acres per day, and thus the entire crop can be harrowed two or three times per week, which will be none too much.

With the slanting teeth, corn ground which has considerable rubbish on it can be harrowed, but requiring much more care. By the aid of stalk cutters, or even by deep and careful plowing with the best class of riding plows, the stalks can be turned under so completely as to admit of corn harrowing. And it is vitally important to harrow, so that all farmers will provide in time to dispose of stalks, stubbles, or coarse manure, and thus give the harrow chance to do good service.

The harrow is not half appreciated, nor is the character of the harrow needed fully understood. The old, heavy, clumsy harrows should be sent to the wood pile for fuel, and the light implement with small but numerous teeth substituted. The real harrow should have six times as many teeth, and be three times as large as the regulation harrow of forty years ago, some of which are trying to do service on the farms of Rip Van Winkle behind the hills, and unrepresented hollows.

There are certain agricultural teachers and writers, who think they are ultra on the subject of the harrow, and yet they will advise you not to harrow if the ground is wet, or on cloudy days. This is the worst kind of advice, for the reason that it has a plausibility in it which will lead unthinking to do the wrong thing.

The real harrow should be wet there are good reasons why the harrow should be kept going, where there is one for only harrowing on dry ground on sunshiny days. If it be wet, the weeds will grow the faster, and they must be destroyed or the game is up.

There is no danger of making the soil into mud or morass by harrowing when wet. It is the best way of drying it out, and keeping it from baking. So disregard all advice to let your corn alone if the soil is wet. And the fact that such teachers advise to keep out of the field on cloudy days, shows that they do not know the first principles of corn raising. Avoid all false teachers, especially those who advise waiting for more favorable weather, just at the critical time the crop must be made, if at all. Waiting is the fatal mistake of too many farmers.

Low State Register.

The Southern Live Stock Journal says: "German millet for forage should be cut as soon as it blooms. It is then worthless for seed of course; but just at the stage most valuable for forage and exhausts the land less if allowed to mature. If left to the seeds to mature they are very abundant, and are very rich food; but the stems are then too hard and worthless for forage, and the soil much more damaged. The mature stems are very hard, indigestible and injurious.

The ripe seeds found much more promptly than corn, and if mouldy or too freely used, sometimes cause diabetes. If cut at the right stage, the whole plant is safe, very valuable and wholesome. Many delay cutting too long."

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Agricultural.

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We are daily becoming more deeply impressed with the importance of tile drainage on most farms, and especially on fields that are to be devoted to raising sorgo in the Northern States. The tile should be put in three feet deep and two rods apart. Mr. John J. Thomas thus sums up the advantages of tile-draining land. He says:

The farmer who has a thoroughly tile-drained farm, has entire control of it the season through. He can begin work as soon as the frost is out of the ground. He has plenty of time to subsoil his land, and to repeat plowing and harrowing to reduce it to the condition of a garden. His crops are put in early, there get a timely and vigorous start, strip the weeds as the latter are permitted to grow at all, and insects make less impression on them. If the summer is wet, the surplus water is held like a sponge in the deep mellow soil, or is carried off in the tile drains. If a severe drought occurs, the same deep soil holds enough moisture for the growing crop. Timely and repeated cultivation keeps the weeds under and promotes growth. With such land and such management, the owner is in a great measure independent of wet and dry seasons; he has heavy crops every year. There are of course certain adjuncts which are carefully attended to, as for example the saving and manufacture of manure, the timely spreading and thorough intermixing with the soil; a well-drained rotation; good tile-draining implements; and clean and comfortable quarters and regular feeding for all domestic animals. The superficial farmer may not be able at once to accomplish a complete change for this better system, but he may begin without delay, and by constantly aiming at the highest degree of improvement, soon be able to reach satisfactory results.

Crop Reports.

EDITOR RURAL WORLD: Reports have been received from 100 counties of the 114 of the State. Most of the correspondents speak most of the outlook for wheat. Many say "Extra," "Never better etc., etc." Still report the prospects as below: The average, Jamaica, where Mr. Espeut will superintend trials with them on an extensive

As compared with May 15, 1883, the present average is 110. Very little wheat is reported as being plowed up. Spring wheat is reported in only a few of the northern counties. But a few counties report barley. The acreage remains about the same as last year for these grains. The acreage of corn as compared with 1883 is reported as 100.40. Reports represent the planting as very backward and the soil as poor fix for the crop. The proportion now planted is stated at 45 per cent, amount to be planted, and probable germination as 81.41. Peaches are represented as likely to be a complete failure, few only reported, and with poor quality, while the application of the new process and the best machinery places within their reach. When they send us as they might, at least 100 per cent more sugar, costing considerably less than that which they are now shipping, they will be able to defend French and German competition.

On the expense of extraction by the new process.

The process has been tried in this country with results which justify the most sanguine expectations, especially when it is adopted of a large scale and with fresh cane. From one ton of cane 269 pounds or 12 per cent of sugar—sam-

As compared with 1883 averages for one of the animals in the sale of A. L. Hamilton, of Lexington, Kentucky. In our cattle columns this week, as well as in our advertising columns, something more is said of this sale that will interest all stockmen.

Barrington Mary 2nd.

On this page we present a picture of one of the animals in the sale of A. L. Hamilton, of Lexington, Kentucky. In our cattle columns this week, as well as in our advertising columns, something more is said of this sale that will interest all stockmen.

The Shepherd.

Officers of the Missouri Wool Growers' Association.

President—H. V. Pugsley, Plattsburgh, Mo.
Vice-President—G. H. Wallace, Howard County, Mo.

Treasurer—N. H. Gentry, Sedalia, Mo.

Secretary—L. L. Seiler, Osborn, Mo.

OFFICERS OF THE MISSOURI MERINO SHEEP BREEDERS' ASSOCIATION.

President, Samuel Jewett, Independence; Vice President, R. T. McCully, Lee Summit; Secretary and Treasurer, H. V. Pugsley, Plattsburgh; Directors, Harry McCullough, Fayette; Philo D. Jewett, Independence, and L. L. Seiler, Osborne; Committee on Progress, J. V. McCully, Sam Jewett and Harry McCullough.

EDITOR RURAL WORLD: I am an interested reader of your sheep and horse departments, and generally look through the several pages of the paper as soon as it comes to hand. Am more interested just now in sheep, having settled here from Ohio three years ago.

I want some information respecting the sheep men who advertise in your paper, and particularly of S. Jewett, H. V. Pugsley and McCullough & Bro. Wanting some fifteen or twenty rams this fall to run with a lot of ewes I brought with me, that have not done as well as they should, now been as well bred as intended, it is now my purpose to breed them up and make the most of my wool.

As I have been a subscriber for your valuable paper for some years, both in Ohio and here, I now for the first time call upon you for information. What I want to know is, whether I can see the gentlemen I have named, and believe them to be truthful and reliable men or not? There is no foolishness about me, I know what I want, and at home would know where to get it, but here I do not, and have already found it out.

G. D. C.

Saline county, Kas.

ANSWER.—We do not admit advertisers to our columns unless we, to some extent, know those who send them; and never unless we know something of their history and business. But, be that as it may, the men you name are the best to be found in any State in the Union. Take our endorsement.

Samuel Jewett's Address Before the Missouri State Wool Growers' Association.

"MERINO AND ITS GRADES AS WOOL AND MUTTON SHEEP."

GENTLEMEN:—This is a question of great importance, and needs more study and experience than I am able to do justice to; but as my remarks at this time are directed to the Merino breeders, I shall confine myself to the consideration of that breed of sheep in which they are interested.

The first demand for humanity is for something to eat.

The second is for something to wear.

The first knows no exception, the second very few exceptions. Allow me to say right here, that the Spanish Merino and their crosses furnish nearly all the wool to clothe this great and growing nation. How best and most economically to feed the masses. Let no unfair word be said of the so-called mutton breeds. They have their place in the world's economy, and right well do they fill it. Let us go back say twelve years, and note the pace made by the different breeds of sheep up to the present time. What increase has the long wool breeds made? They are commonly recognized as the more prolific; but when we look around for results the fact is palpable, with the incentive of a steady and paying demand for breeding animals and a fair price for meat for twelve years, there is no such increase apparent in the numbers of long wool sheep as it seems should have followed the intelligent efforts of those breeders making the culture of such stock a specialty. Looking the past over, can we successfully depend on the large breed for our mutton?

What can we say of the Merino in the past twelve years? Why, they have multiplied by the millions, and their meat is becoming the favorite. It is recognized in nearly all the States as the sweetest and most desirable for table use, also in foreign countries, and brings the largest price. The only objection is size, (and this with the farmer many times in its favor.) Why not then make the Merino to produce the flesh to feed the millions, as well as the wool to clothe them. After patient and careful study, I am forced to conclusion that the present diversity of flesh of the so-called Merino breeds is founded more upon sentiment than reality, admitting the necessity for increased carcass and the possibility of securing it without sacrifice in fleece. The one important question remaining is: How can it be accomplished? The answer is by judicious breeding and liberal feeding, combining the two with care you will soon reach your reward of success. The breeder who succeeds must be a student as well as a liberal provider, mere haphazard will bring to his followers the disappointment they deserve. The patient and far reaching efforts of Bakewell and Elmore, in England, and the enlightened perseverance of Alwood and Hammond, and a long list of honored preceding contemporary breeders in the United States must be students and emulated with such modifications as may be seen necessary to bring results within the existing department of a really diversified sheep husbandry.

SAMUEL JEWETT.

The following I take from "The Merino as a Mutton Sheep," by Messrs. Hayes and Garland:

"If we look at the question physiologically, we should be led to infer, a priori, that the most tender and consequently assimilative flesh would be produced from the smaller and finer than from the larger and coarser animals; as the flesh of the partridge and teal is more tender than that of the turkey and mallard. Besides, it is well known that there is always a correlation in the different parts of the same animals, as in the hair, feet, and limbs of the Arabian horse. The fineness of the fibre in the fleece of the Merino is therefore but an indication of the fineness of fibre of its flesh. It would seem that even when the size of the Merinos is increased by an improved alimentary regimen, the fibre of the meat does not become coarser; for it has been demonstrated, by experiments in France that improved nutrition has only the effect to make the woolly fibre longer; it does not increase its diameter. By the law of correlation above referred to, the fineness of the fibre of the flesh will be retained with that of the wool."

It is difficult to obtain testimony from England as to the relative excellence of the mutton from the different English races. Each district insists upon the superiority of the particular race which

cultivates. Thus the English landholders and farmers can never agree whether the Leicester or Down mutton is best. Popular opinion, outside of the agricultural districts, has settled it in favor of the Southdowns, one of the smallest of the so-called English races. The mutton of the Highland sheep, still smaller, is said to be superior to that of the Southdown. It does not mature as early as the improved English races, and is killed at five years old. It may have been the excellence of this mutton which led to Mr. Webster's observation, that he had learned in England the secret of having good mutton was "that the sheep is much closer, and the two come on the market nearly even in the race of competition, as far as cost per pound is concerned." The fact that Australian wool is liable to be excessively tender from long continued droughts, and is acceptable to those who cannot afford to use pork or butter, as it supplies the necessary carbonaceous element of food.

An observing American lady, who was a housekeeper for several years in a fashionable quarter in London, informs us that she was accustomed to obtain for her table, from a butcher who supplied many families of the nobility, the small Welsh mutton, the price of which was about 24 cents a pound, where the ordinary large and fat mutton cost about 18 cents. This mutton, not larger than the smallest in our market, was superior to that she had tasted. The legs, though plump and round, resembling a shoulder of pork, had but little fat. As we have never lost an opportunity for seeking information on this subject, we asked the opinion of the experienced flock-master, Mr. Flint of California, who had at one time a hundred thousand sheep in his flock. We found Mr. Flint enthusiastic in his admiration of the mutton qualities of the Merino. He declared that he would never think of using English mutton for his table, saying emphatically that it was his theory and observation that well-fattened Merinos made the best mutton in the world, and that a well-fattened Saxon Merino, the smallest of all races, made the best of all, as the finest wool is accompanied by the finest fibre. Having met, at the public shearings in Avon, New York, last spring, several of the most extensive flock-masters of Australia, who were visiting this country for the purpose of purchasing Spanish Merinos, we addressed the same inquiry to them. All uniting in declaring that the opinion in Australia was in favor of the superiority of Merino mutton in quality as compared with that of the English races. Mr. Geddes, an agriculturist of high authority in New York, expresses the same opinion.

The Boston Wool Market.

From the "Weekly Wool Circular of Messrs. Halloran & Cohen, Boston, Mass., dated May 19th, we gather:

"The past year has not been a profitable one for dealers or manufacturers, but the present conditions of the market are favorable for very low prices and reasonable profits if buyers will only use discretion and judgment in their purchases.

The demand for all kinds of wool is now very light indeed, prices are naturally weak, and it is essentially a buyer's market. Quite a number of mills are shut down, a great many are running short time and curtailing production all they know how. Woolen goods are not selling to any extent, and we are threatened with the stoppage of still more machinery unless there is a change for the better in the demand for woolen goods; and add to all this the recent financial troubles in New York City, and we should see that this was a good season to buy wool cheap, and when it is sold should be bought, getting in all cases proper deductions on all unwashed and unmercantileable fleeces in the case of washed wools, and on black, burly, cotted fleeces and tags in all descriptions of wool. An article well bought is half sold!"

"An article well bought is half sold" is as true of wool as almost anything we can think of.

There is a large stock of fine Australian wool on the market, which at the present time cannot be sold at cost. The supply of inferior California and territory wool is also larger than usual at this time of the year, but in other grades the stock is only moderate, and in the case of combing wools, we may say there are none here, and early shipments will probably be wanted on arrival.

Reports from California and Texas would indicate that growers are demanding higher prices than buyers are willing to pay, but as little has yet been done, we presume that the growers will soon adapt themselves to the situation, and see the wisdom of having their wools in the market and sold before the later shearing of the territories and the older wool-growing States."

This of course is looking at the matter from a manufacturers' standpoint, and the statement made must be so read and understood.

Destroying Sheep Ticks.

Tobacco dust has proved a very cheap and reliable remedy, and is attended with the best success. People generally dislike wetting the wool in cold weather, and this is much more simple and easier in practice. Wholesale dealers buy many bagsheads of Havana tobacco. After they have used all they can for every purpose in the trade, there remains a great drift, of no use to them whatever. They will give any one all he needs. Ten pounds will be sufficient for one hundred sheep.

Now an attendant catch a lamb and lay it on one side on a box two feet or so high, for ease in working. The other will open the wool with one hand, while the other he sprinkles in a trifle of the dust, in about four rows the entire length of the sheep, from head to tail. Put one row, not on top of back, but say six or seven inches each side from backbone, and the other two rows on sides near where the legs leave the body. You will be agreeably surprised in a few days, to find that the ticks over the entire body of the sheep are all dead in or near these lines of tobacco dust. One application has been all that was needed each year. This can be used for lice on animals also.

Sheep Notes.

A writer, speaking of the economic methods of sheep feeding, estimates the allowance of corn for one sheep at three-quarters of one pound each day, stating that on this quantity of grain and sufficient grazing or hay, sheep will gain in condition and fatten. This in New York State, where dry feed is used for several months in the year.

Sheep-raising, as conducted in England, is much more thorough and judicious than in our country, but we are learning. A breeder of Hampshire Downs in Kent, England, has 360 lambs from 300 ewes this season, without the loss of one, and three years ago had 412 lambs from 321 ewes, without losing a ewe in the preceding winter.

It is difficult to obtain testimony from England as to the relative excellence of the mutton from the different English races. Each district insists upon the superiority of the particular race which

COLMAN'S RURAL WORLD.

The Poultry Yard.

Time-Honored Spanish.

There are scores of fanciers in the United States who watch the rising popularity of some breeds and the neglect and decay of others who would not exchange their time-honored Spanish for any breed in the American standard of excellence. This is a grand delineation of independent mind and taste, and a wise provision in the moulding of the odds and ends of our diverse natures to give us those special likings for this or that color, breed, variety or part, as our tastes and judgment may dictate.

Another thing I ascertained by these experiments, which was, that the bees which gather the honey are not the ones which deposit it in the cells. I was reading a paper, not long ago, how the loaded bees from the field carried their honey easily to the top of the story. This was used as an argument in favor of placing the empty combs on top of the innermost of raising the second or third story and placing them on the tiering up plan. As far as the loaded bees are concerned, it makes no difference, as will be seen when I state that on the fifteenth day after the first Italian hatched, when none but black bees were going in and out at the entrance, I found by taking off the cover and examining the sections, that scarce a black bee was in them, but all were Italians, which were at work there, building comb and depositing honey. After this I used an observatory live containing but one comb. In this I also had black bees as field bees, and young Italians for the inside work. By watching the entrance through the glass, I could see the loaded bees come in, and when one came on the side next to me, I could easily see what it did with the honey. The bee would pass along the comb till it came to a young bee, when it would put its tongue toward the young bee. This bee had no load in its mouth, but it could take the honey, but if it had, our field bees must try again till one was found that could take the load, when it was given up to it. The field bee then rested a little while, when it would go for another load. Thus it will be seen that any entrance leading direct to the surplus arrangement, as was formerly made in the Langstroth hive, is of no use, but on the contrary a positive damage, as in cool nights it causes the bees to leave the box, from allowing too much cold air to enter them. To secure the best results, it is necessary to be fully acquainted with all of these minor points of interest about the bees, so that we may combine them on the one that will produce the most honey.

Hatching Time.

Soon the time of hatching will be in order, and then the most interesting and recreative part of the routine of poultry keeping will claim our attention and care. Although this month is rather early in our climate to set hens, many no doubt will venture a setting or two, but in most cases they are from Asiatic breeds. Before the time of hatching it is advisable to save the eggs from our best breeding hens, if they are up to the standard required. Each egg should be marked with the date it was laid and put away in a safe place where it will not get chilled, and turned every day or two, if kept some time before setting. It is not always safe to trust a valuable setting of eggs to a broody hen until you have proved her staying qualities. The precaution for proving her sincerity is very important. Broody hens are sometimes fickle and not to be depended on, and most especially if we have choice eggs of our own or high-priced ones from others that we do not feel disposed to risk by giving them to a hen on her first sign of broodiness. When a hen manifests a disposition to sit by remaining on the nest over night, by clucking or ruffling her feathers when touched or approached, it is time that some action be taken to find out if she means business. Select a comfortable place in your hatching room, if you have one; make a clean, nest, and mold it like the laying one; remove the hen at night or day, and when she gets to the nest with a few pieces of straw under her, and put a cloth or board in front to keep her quiet. If she shows a determination to attend to business in the nest 24 or 30 hours contentedly the valuable eggs may be entrusted to her keeping.

—An unknown paper says: In the Northern States, sheep to produce fiber of first quality should be housed during winter; not closely confined, but have a comfortable, dry place, and be allowed to go in and out at pleasure. They should not be allowed to range over the fields, as that is fatiguing to the animals, and the little picking of grass operates against their eating up the food given. They should have access to pure water every day. Sheep well housed and fed plenty of good hay and fodder need little grain. The latter should be given sparingly at first, but regularly, and slightly increased as the winter progresses, so that the sheep be not allowed to lose flesh. The outer end of all wool is weaker than that near the skin, and should the sheep become very thin in flesh it splits and becomes quite rotten, consequently is of little value.

—A Missouri correspondent writes as follows to the Texas Wool-Grower:

"I feel very much interested in the sheepmen of Texas and read with interest the experiment of Messrs. Wheeler, Lyman & Co., in feeding and shipping their 100-pound lambs. Their idea of shearing before shipping certainly is correct if everything is favorable. It is eight weeks long enough to let them get fat, if not too long, as the sheep are not to be sheared as those sheep were. When Texas uses none but large, well matured rams, and makes it a point to raise a class of wethers to weigh 110 to 150 pounds at maturity, which can easily be done in a few generations of proper breeding, and have those wethers fat the mutton trade will pay well. Here in Missouri the best results are gained by raising full blood or high grade Merinos, and when matured three years old, winter well, shear in April, then feed from six to eight weeks all the grain they will have, but be sure to get them to market in May, when mutton is always high. By this process mutton wethers bring from \$7.00 to \$7.50 per head. If she shows a determination to attend to business in the nest 24 or 30 hours contentedly the valuable eggs may be entrusted to her keeping.

—The Boston "Poultry Monthly."

The Apiary.

At What Age do Bees Gather Honey.

The following article from the pen of M. G. M. Doolittle, will be found valuable to keepers:

The above heading may be thought by some to be of little interest, but as it has much to do with the surplus honey we get, I thought a few words on the subject would not be amiss. Many seem to suppose that the bee is capable of going to the fields to gather honey as soon as the laying one; remove the hen at night or day, and when she gets to the nest with a few pieces of straw under her, and put a cloth or board in front to keep her quiet. If she shows a determination to attend to business in the nest 24 or 30 hours contentedly the valuable eggs may be entrusted to her keeping.

—An exchange says: By proper grading up much time can be saved in the earlier maturity of fat sheep. A grade that requires three years to fully develop, by a couple of crosses with a Down will be ready for market at twenty months. The final struggle for New England market for fine clothing wool will be between Texas and Australia.

Any reasonable adjustment of the tariff on the raw material that will satisfy our manufacturers to will drive Ohio wool growers to the wall, or rather to growing combs and hives, and place them in a hive without any bees, as is frequently done to introduce a valuable queen, we will see young bees not over five or six days old go to the fields, being compelled to do so for water, pollen, etc., because there is none of older age to go; but this does not prove that bees of that age usually do so any more than the experiment of feeding twenty pounds of honey to bees confined to the hive before one pound of wax was produced, proves that it always takes twenty pounds of honey to produce one pound of comb. I have conducted two experiments since I have been keeper, to ascertain the age at which bees gather the first honey, and as each proved the same, I believe it is the time when the bee brings her first load of honey, when the colony is in a normal condition, as it always is to store honey in the winter. The bee is sixteen days old before it gathers honey. If we take combs of bees just hatching, and place them in a hive without any bees, as is frequently done to introduce a valuable queen, we will see young bees not over five or six days old go to the fields, being compelled to do so for water, pollen, etc., because there is none of older age to go; but this does not prove that bees of that age usually do so any more than the experiment of feeding twenty pounds of honey to bees confined to the hive before one pound of wax was produced, proves that it always takes twenty pounds of honey to produce one pound of comb. 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Horticultural.

Judge Samuel Miller, Bluffton, Mo., will assist in conducting the Horticultural Department of the Fair. Any inquiries addressed to him will promptly be answered through the RURAL WORLD.

Strawberries from Arkansas.

EDITOR RURAL WORLD: I send you 4 quarts of berries of a plant that was found in the Captain Jack's. I have tried it three years now, and it holds out the same. The berries I send you are as they were picked on the vine. They are good eaters, perfect blossoms. If you can advertise on sell plants, will sell them for 50 cents per dozen for home market. Will bring double what other kinds would. I call them the Beauty of Beebe.

Respectfully,
JOEL A. MOORE.

* Beebe, White Co., Ark., May 20, '84.
The berries reached us on the morning of Thursday, the 22nd of May, before this letter, and were yet in good sound merchantable condition. Were of fair flavor, evidently good travelers, fine size, and a good marketable berry.

Characteristics of the Flora of St Louis County.

READ BEFORE KIRKWOOD LITERARY SOCIETY BY MARY E. MURFIELD.

There is no subject more appropriate for consideration at this season of unfolding bud and blossom than the forms, habits and natural affinities of our indigenous vegetation.

To a certain extent this section of the Mississippi Valley combines the floras of the North and South with a goodly proportion of species from the far West. The East does not contribute very largely of its most interesting forms, except where they have been introduced by man; but without these we have an almost unrivaled luxuriance of plant life, and are especially rich in arboreal species. Indeed, variety in the woody plants may be considered our botanical strong point.

In the Oaks alone, few localities can compete with us, as more than half of the sixteen or seventeen American species,

including some very marked and interesting varieties, are to be found within the limits of St. Louis County. Both

species of American Walnut (*Juglans*) occur in considerable numbers, and the Hickories (*Carya*), including the Pecan, grow in such variety and abundance that it will be many years before the supply of valuable timber and fuel derived from them will be exhausted. With us, the Black and Red Elms, the Red and Silver Maples, the Buttonwood or Sycamore, and the Cotton-wood which abounds along the banks of streams, grow to most noble proportions. The Tulip tree (*Liriodendron*), the Sweet Gum (*Liquidamber*), the Sweet Buckeye (*Esculus*), the Ash-leaved Maple or Box Elder, the Linden or Basswood, the Black Locust, the Honey Locust, the Hop Hornbeam (*Ostrya*) and the common Hornbeam (*Carpinus*), the White Ash, the Aspen, the Sassafras, several Willows, and various others contribute their floral wealth and diversified foliage to the beauty of our forests and to the adornment of our parks and lawns.

Of wild fruit trees we have also a very creditable list, among which may be mentioned the Red Mulberry, the Hackberry, the Sugar-berry (*Celtis*), two species of the Coffee tree (*Gymnosciadus*), the Black and the Choke cherry, the Purple and the Yellow plum, the Crab apple, Papaw and Persimmon; some of these are unrivaled in beauty. The tribe of Evergreens has, as far as I am aware, but one representative in this section, viz., the Red or common cedar. Of choice flowering shrubs, the variety is so great that I shall not attempt a full enumeration.

Varieties and Culture of Small Fruits

—R. D. Mc Geehan, Atlantic; W. O. Thompson, Luzern, and F. H. Bruning, Kent.

Report of Director of Twelfth District, by Alex. Peddie, Emmettsburg.

Orchard Culture—A. J. Haviland, Fort Dodge; John N. Dixon, Oskaloosa, and J. B. Cripps, Albion.

Grape Culture—C. P. Hunt, Waterloo; Silas Wilson, Atlantic; H. H. Pearson, Ainsworth.

Report of Director of Eleventh District—N. A. Reeves, Waverly.

Forestry—Alex. Peddie, Emmettsburg; H. R. Ransom, Cornell Bluffs; Lawrie Tatman, Springdale.

Report of Directors of Tenth District—Hon. A. H. Lawrence, Le Mars.

Exhibits of apples, grapes and jellies were shown by Jonathan Thatcher, of Van Buren county; Harvey Fuller, of Bremer county; Messrs. Wilson and Hardenberger, of Cass county, Mr. Speer, of Black Hawk county; Mr. Thomson, of Grundy county; E. M. Guffin, of Iowa City; Johnson County exhibit, and others.

The President then commenced his annual address by saying that but few of our many varieties of small fruits were hardy enough to stand the rigor of our climate. Too little attention has been paid to the subject of discovering whether trees were adapted to our climate or not. He then pointed out some of the characteristic differences between hardy and non-hardy trees. Those having thick, broad leaves, have been fully proven to be hardy. The extent of the injury of freezing results from the manner of thawing or from the time during which they are frozen. Different trees demand a different amount of moisture and the amount of moisture supplied depends upon the extent of freezing. We can assist nature but never can she be driven. He then described the physiology and functions of the plant cell.

The different varieties of trees demand different times for ripening their woods. When the leaves are blighted by frost the entire internal economy of the tree is disarranged. The blossom buds of some trees are better protected than others, and consequently they are better fitted to our climate.

It would seem impossible that there should be any lack in so extensive a collection, and yet, strange to say, the beautiful order of the Heaths, some species of which are found in almost every other part of the country and all over Europe, not to mention more remote lands, is here entirely unrepresented, except by one anomalous, parasitic herb—the singular but lovely Ghost flower (*Monotropa uniflora*). Neither have we, so far as I have been able to discover, any of the Hollies. We cannot boast the *Edobiodendron*, *Rhododendron* and *Azaleas* of the East, nor the *Kalmias* and *Azaleas* of the South, and nowhere hereabout does the variegated *Perilla* or the spicy Winter-green and *Pine* reward our search under the fallen forest leaves. On the other hand, we have many extremely interesting, if not equally lovely forms of vegetation that are unknown in the Atlantic and Southern States. Especially is this true of our *Euphorbias*, which no region of the country can boast so many species. Our indigenous *Compositae* is also more extensive than that of any other locality with which I am acquainted.

Our herbaceous vegetation, while not especially characteristic, possesses too much of interest at this season of the year to be ignored. Among the first blossoms to peep through the earth are the *Antennarias*, the tiny, but delicate *Blunts* (*Houstonia*), the delicate *Claytonias* and the rare *Heptacas*. Very soon after we find the open woods carpeted with Violets of six or seven species. The Bloodroot opens its milk-white,演进的，stars, the *Uvularias* toss their yellow bell in the breeze, and the pearl-like hearts of the *Dicentras* rise in spikes above their tufts of blue, green, fringed leaves.

Apples Honestly Packed.

A London journal in commenting on the recent apple show at Chiswick, draws attention to the method of packing apples adopted by the Nova Scotians. The remarks are: "When we note the singularly bright and unbruised condition of the samples put up at Chiswick, it is not possible to wonder why these foreign fruits meet with a ready sale. Apart from their fine size, and in many cases rich coloring, there is the fact that even in the result of handling and packing alone they seem to excel our market samples, although the former have come thousands of miles. Why is it so? The obvious reason is that more care is shown in picking and packing, and, not least, in sizing, so that the sample throughout is an even and a sound one. The lot at Chiswick (as do all other imported kinds from our North American colony) came packed in a neat barrel resembling an ordinary flour-barrel. This was lined with soft paper, and into it were placed the fruits as evenly as possible, having regard to the fact that in this case, the barrels being of many sorts, were of various sizes. The pieces of paper divided each kind, and when the barrel was filled, the packing before the head was inserted.

Mr. B. G. Buell, of Michigan finds top-grafted trees on such hardy stocks as Northern Spy and Duchess of Oldenburg to withstand the effects of intensely cold winters much better than root-grafted trees; and the Red Canada top-grafted on the Northern Spy nearly escaped in the unprecedented cold of 1872 and 1873, when others, such as the Baldwin, were killed outright. Tompkins County King was much injured by this intensely cold winter, and the trunks were split and many of the larger branches killed. Wherever the trees thus injured were severely pruned and shortened in the trees were saved; those not pruned died in a few years, thus showing the injury a tree suffers from neglect in removing dead limbs.

Some farmers make it a practice to keep their poultry in their orchards from early spring until cold weather sets in, and they find it pays. A picket fence should be built around the orchard, high enough to prevent their flying over, with suitable buildings in one corner of the yard to shelter them at night. Thus situated the poultry will thrive and prosper, keeping themselves in good condition, and the increase of eggs will be greatly augmented and their usefulness enhanced, to their owners at least, on account of the myriads of insects and worms that are to be found in the orchard. Any one who chooses to enquire will find in his own community abundant living witnesses to assure him that the best fowls may be retained in the orchard, and the continual scratching which is done by them proves advantageous both to the soil and the trees themselves.

—After grafting, says a writer in Farm Home, all the new sprouts that start should surely be kept off until the scions get well to growing, and if in that time any of the old limbs or spurs should commence growing very vigorously they should be clipped to check their growth. After about the 1st of August stop taking off any sprouts or checking the growth of the old limbs in any way, for if they are allowed to grow the scions will stop growing. The next year after grafting, in May or June, take off that portion of the Northern Spy trees in Middlebury, N. Y., sold for \$100. Four Greening trees in El Roy, N. Y., yielded 160 bushels; one Baldwin tree in Perry, N. Y., yielded forty-two bushels.

Cutting Seed Potatoes.

—Last year's experiments made by the different agricultural colleges in the United States were against the theory that single eyes and cut seed would yield the largest crop of potatoes. The largest yield was from seed of whole potatoes, but the difference was not great, and there were a good many more small potatoes from the whole than there were from the seed of cut potatoes and single eyes. We know from our own experience for the last three or four years that we have been in the habit of using more seed than is profitable or necessary. "We believe the plan of cutting seed potatoes to single eyes," says the Toronto Globe and Farmer, "and planting each by itself is a good one where the operation is carefully performed, so that imperfect eyes are thrown out." We are not prepared to endorse this, but we may say that it is better to have a single eye than a waste of seed to plant three single eyes. Some of the best potato growers in the United States and Canada have always contended that the best way was to cut the seed so that there would be two good eyes on every piece and three pieces should be put in a hill.

Horticultural Notes.

—Peter Fay writes to the New England Homestead that after experimenting for a number of years and trimming every month in the year, he has come to the conclusion that from May 25 to June 25 is the proper time. There is a full flow of sap then, and the wound begins to heal immediately. The two worst months in the whole year are March and April.

—While experience and good judgment are both essential to enable one to prune trees and vines properly, yet there are two simple rules which will greatly assist the amateur: First, begin at the outside and so trim out the shoots that each will have equal space to expand their leaves in full light without shading each other. Second, remove only weak, upright young wood, or decaying old wood.

—While stunted trees should be avoided it does not follow that the tallest, smoothest trees in the nursery are the best for planting. These tall trees have not been checked enough to secure good root growth, and will be more injured by transplanting. Some good varieties are always rather crooked in the nursery rows, and at the best is very rarely a straight tree, though one of the most valuable and productive of all.

—The orchards of Werder, near Potsdam, Prussia, comprise an area of 1,600 acres, which in 1883 yielded an income of nearly 1,000,000 marks. Intelligence and perseverance have succeeded in raising vast crops of fruit from a soil scarcely fit for planting rye. All the fruit gathered in Werder is shipped almost exclusively to Berlin and shipped in crates weighing seven kilos. The total number of crates shipped last year amounted to 747,143. The number of cultivators is about 550.

—They showed that blight was produced by bacteria, and can only be prevented by controlling the sap circulation.

The subject of forest cultivation he said, "It is remarkable that we do not more than we do to meet the coming scarcity of timber. We can well follow the example of foreign nations in this important particular, suggesting that a portion of the farm at Ames be laid aside for a nursery of forest trees, to be sold to settlers, at actual cost, on condition that they be planted in tracts of not less than three acres.

Then, in consideration of the fact that none of our native apple trees are adapted to stand cold, he recommended that a commissioner be appointed to procure from Russia some of their hardy varieties to distribute in our State. With a few words of warning he then closed his instructive and very interesting lecture.—Country Gentleman.

STAKING RASPBERRIES.—The practice is becoming more and more common of staking raspberries in summer.

They have grown two or three feet high, and when this is properly done, they never require staking. Cap berries should be always thus treated. There are some of the taller upright growers that are often staked; and in plantations of some size, it is important to do it easily and expeditiously. First pass along and drive the stakes in the right place. Two persons will do this rapidly if one makes the holes with a light crow-bar, and the other inserts and drives the stakes. Then provide a tool by bending an iron rod a foot or more long in the shape of a semi-circle, with a short handle at the middle. This is to be held in the left hand. Then take a sickle, or an iron rod bent like a sickle, in the right hand. With these two tools grasp the bunch of canes and bring them together like pincers, while the assistant ties them up to the stake.—Country Gentleman.

TREES EVERGREEN AND FOREST TREE SEEDLINGS, in unlimited quantities.

LARGE SIZE STOCKS, and at the lowest prices.

LEAVES NATIVE VARIETIES, from two to six feet high, at one-half the price charged by others.

Catalogue free.

F. K. GILLESPIE, Edwardsville, Ill.

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EARLY AMBER and HYBRID CANE SEED.

30 bushels of Early Amber and 20 bushels of Hybrid cane seed.

Hybrid cane seed has been tested two years and has proved to be from 10 days to two weeks earlier than the Amber. Price for Hybrid cane seed, 60 lbs. per bushel, 100 lbs. per bushel, 100 lbs. per bushel, or \$4.00 per bush. C. J. REYNOLDS, Corning, New York.

Sugar Cane Seed.

Early Amber, Early Orange, Honduras, and Stevia.

Price for Amber, \$1.00 per bushel.

Price for Orange, \$1.00 per bushel.

Price for Stevia, \$1.00 per bushel.

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Price for Soybean, \$1.00 per bushel.

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THIRTY-SEVENTH YEAR.

BY NORMAN J. COLMAN

PUBLISHED WEEKLY

AT \$150 PER YEAR; OR EIGHT MONTHS \$100.

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The subscription of the RURAL WORLD is one dollar and fifty cents per year. Those remitting one dollar will be credited eight months.

ADDRESSES.

Norman J. Colman has accepted invita-

tions to deliver addresses at the follow-

ing places and times:

LEXINGTON, Mo., Monday, June 2nd, at 2 P. M., on "Dairy and Creamery Farming."

AGRICULTURAL COLLEGE, Mississippi, June 18th, Annual Address at Commencement Exercises of College.

OMAHA, Nebraska, Sept. 5th, Annual Address at the Nebraska State Fair.

The Missouri State Horticultural Society will hold its summer meeting on June 10th and 11th. We are pleased to call attention to this meeting, and hope there will be a large attendance of fruit growers. Springfield is the centre of a large fruit growing section, and is an excellent point for the meeting. Turn out, brother fruit growers, and hold a meeting worthy of so important an interest.

Mr. E. A. RIEHL, the well-known horticulturist, writer, etc., of Alton, Ills., favored the RURAL office on the last Saturday with a call. He informed us in the projects for fruits etc. in his section, are first rate, and that the strawberries fields have not suffered so much from rust as those further south. He will be glad to learn through the RURAL WORLD at once, how far the rust has affected their berries.

Too much importance cannot be attached to the forthcoming meeting of the cattlemen in this city on the 17th of November next. The thousands of ranchmen and feeders will organize and harmonize their business in a way never contemplated before, and among them will be found the greatest capitalists known to any department of commerce. Every arrangement is being made to ensure a great good meeting, and to make all who attend comfortable and at home.

The strawberry crop is falling short of expectations everywhere. The rust has visited most of the strawberry fields, especially in Southern Illinois, and Southeast Missouri, and cut off half the supply anticipated, and injured the quality of the fruit remaining. The growth of the berries has been checked and many of them are more or less stunted and lack that bright attractive color inseparable from perfect fruit. The price of the rusted berries is not so great as to the rusted berries. The subject should become an important one for horticultural societies to discuss.

ARKANSAS flooded the St. Louis markets with strawberries the past week, averaging for 400 cases or 2,000 cases per day. The receipts from Southern Illinois, Carthage, Mo., and Columbus, Ky., footed up in the aggregate about 4,000 cases daily, which was by far the largest quantity of berries St. Louis was ever called on to dispose of in the same length of time. The market was fairly glutted, the good and choice strawberries, such as was required for the shipping trade, was not plenty. The unusually large shipments of Crescents, Monarchs, Chas. Downing's, and such varieties as could not be re-shipped, were mainly responsible for the very low prices prevailing.

PRICES of wool have declined somewhat during the past week, under very large receipts, and the continued timidity of the banks about discounting commercial paper.

There is as yet, no wool going from here to Eastern commission houses, but a fair amount of mill orders. Prices are of course very low, but this continues to be the best wool market in the country, and the only spot cash market.

FRUIT NOTES FROM SPRINGFIELD, MO.

FRIEND COLMAN: I am very sorry to have to say to you many readers that the immense apple crop that we evaporator men have for some time considered a sure thing, is to a very large extent, a failure. Instead of a full crop, as indicated by the bloom, we will have less than half a crop, and very few pears and cherries. They, like the apples, have dropped badly. Winesap, Newton Pippen, Little Romane, Rambo, and many others, are all gone. The only ones left are here and there a tree with a full crop. I can't explain why, but it is a fact. We will have a meeting here next Wednesday to revive and reorganize our horticultural society that did so well some years ago, and will make suitable preparations to receive and entertain the members of the State Society the 10th and 11th of June. I do hope you will make a special effort to be here, and bring some of the surviving members of the old Meramee Horticultural Society with you. Where is Muir? Votow, Dr. Beal and his amiable wife? and many others? Bring some of them with you. We will delight to make it pleasant for all.

FRUIT IN SOUTHEAST MISSOURI.

(Correspondence Rural World.)

Yours truly,

A. W. MCPHERSON.

THE PATENT OFFICE AND ITS AIDS.

Since the United States Government has undertaken to place under guardianship all people who have claims against it, and who reply by letter to advertisements, there is one item more demands a little of this paternalism. That is the patent office and the poor ingenuous youth annually shorn by that institution. We have known many a simple, honest man, to live many years happily, till, by ill chance, he conceived the idea of blessing mankind by an invention. Thereafter he lived but to labor for the patent office and its attorneys. The latter are also solicitors. They are eternally soliciting several thousand unhappy men who think they are inventors. They pay them with circulars, and urge them to come. They are especially told that 'tis the little things, the small inventions, that pay. "They pay the patent office and attorneys."

The Secretary is constantly receiving letters from cattle associations of the West, and from individual owners as well, all of whom signify their intention of being present at the meeting next fall. All of the working committees report that they are progressing splendidly, and the executive board now feel that the reception of cattle men will be the grandest entertainment ever given in St. Louis.

CATTLE CONVENTION.

The executive committee having in

charge the plans for entertaining the cattle men at their first national convention to be held in this city, November 17th, 1884, are in executive session as we go to press. At this meeting designs for souvenirs will be presented, and acted upon; and reports from the several committees will be received.

The business men of St. Louis are alive to the importance of the great movement, and are contributing liberally to the general expense fund.

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COLMAN'S RURAL WORLD.

The Cattle Yard.

Coming Sales.

May 29th, W. T. Hearne, Lee's Summit, Mo., Shorthorns.

June 3rd, J. N. Brown's Sons, Berlin, Ills.

June 4th, Hon. D. W. Smith, S. E. Prather and J. S. Highmore, Springfield, Ills.

June 5th, Dye, McClintock & Co., Jersey Cattle, Lexington, Ky.

June 5th, Pickrell, Thomas and Smith, Harrison, Ills.

June 6th, J. H. Potts & Son, Jacksonville, Ills.

June 11th and 12th, A. L. Hamilton, Lexington, Ky., Shorthorns.

June 13th, Williams & Hamilton, Mt. Sterling, Ky.

Nov. 20th, Joseph E. Miller, Holstein Cattle St. Louis.

Yours respectfully,

A. L. HAMILTON.

Central Illinois Sales of Shorthorns.

On Tuesday, June 3rd, there will open a series of four days sales in Central Illinois, as will be seen by reference to the advertisement on the next page. This is an annual sale made by the best breeders of Central Illinois whose farms are adjacent and affording easy transit one from the other, so that those who attend our sale, may, if they wish, attend the others in the order of their days without difficulty and at a very trifling expense.

A glance at the names of those making the sales will convince those who are familiar with Western breeders that they represent the very best in the great State of Illinois; men who have been in the business for very many years and whose reputation both breeders and as men of undoubted integrity is unsurpassed by any in the United States.

The series will commence on Tuesday, June 3rd, on the farm of J. N. Brown's Sons at Berlin, on the Wabash railroad, about 14 miles from Springfield. This magnificent farm of 3,000 acres, nearly every acre of which is in blue grass, has been the home of Shorthorn cattle for over a third of a century; it is indeed the pioneer herd of the State of the West, and to realize its value is to make the most of the most reputable animals known to the Western breeders.

The farm itself is worth a visit, the Brown brothers are known only to be respected and esteemed for all that is true, honorable and manly, and their cattle will be found fit representatives of themselves.

Returning to Springfield the same evening, buyers will find ample and elegant accommodations for all that attend (particularly at the St. Nicholas Hotel, with John McCleary, Mayor of the city as host, and John Nafew, clerk of the same for 20 years) and the information is due them as the parties who are in future to own the stock and make the most of it.

Before the war, several years, Messrs. J. C. and George Hamilton, two brothers, father and uncle to Archie, owning a large tract of very fertile blue grass land in Bath county, Ky., near Mount Sterling, recognized the value of the Shorthorn, and particularly of those families of Shorthorns known as of Bates' breeding. Then and there it was, that A. L. Hamilton got his first impressions of those grand animals, and from that time to the present, nearly or quite a third of a century, he has made them, their breeding, and their pedigrees, a constant study; and has been possessed of the ambition to own the best herd in the world. To those who know him this is no news, for since that time he has made himself familiar, not only with every herd in the country, but with their owners too, and as well with the breeding of the breed in England.

Moreover his intimate connection with the firm of THE HAMILTON'S, and of THE HAMILTON'S and VAN MEEREN, the superintendence of their organization and work in Kentucky, Chicago, Kansas, and later on, his close relation to Ben F. Van Meter, all to Ben Merick have all tended to not only inform him of the best, but to enable him to acquire them. He has, therefore, as we have already said, enjoyed unprecedented opportunities of acquiring the breeding stock for the best herd in the world, and now in the prime of his manhood, and just when he ought to be in a position to realize the grand prospect, he is, by overwork and impaired health, compelled to sell and to quit for a time at least all business, and devote himself to the restoration of his health.

His catalogue lies before us. We wish we could do it justice; but that is out of our power. We will let him tell his own story. In his preface he says:

"This catalogue contains the pedigrees of my entire herd of Shorthorns, which was selected with great care and with the intention of retaining it as thus organized for years to come. But on account of my feeble health, my physician and friends have prevailed upon me to relinquish this with my other business, and I have very reluctantly consented to allow this herd to be dispersed by public auction. It will be seen that I have made selections of the best breeds from some of the most noted herds in America, viz., the famous New York Mills herd, A. J. Alexander, G. M. Bedford, T. J. Megibben, Vanmeter & Hamilton, A. Renick, B. F. Van Meter, B. F. & J. T. Tracy, J. C. & Geo. Hammon, and C. D. & J. T. Tracy, of Geo. Hammon. During my ownership the herd was handled in the following manner: I have sold only when the occasion required; and fed grain when there was necessity for it. In addition, I have had the stock bulls turned daily with their respective lots of cows, which, with the practical and natural treatment given them, has been the means of every female of suitable age in the herd becoming a calf within the past twelve months. Further, I have never fed a pound of any condensed feed; hence, breeders may expect to find this herd in the most useful condition for breeding purposes.

I have made no public sale from this herd, and have sold only the surplus male increase; hence this sale includes all purchases thus far. The stock is in the best condition required; and fed grain when there was necessity for it. In addition, I have had the stock bulls turned daily with their respective lots of cows, which, with the practical and natural treatment given them, has been the means of every female of suitable age in the herd becoming a calf within the past twelve months. Further, I have never fed a pound of any condensed feed; hence, breeders may expect to find this herd in the most useful condition for breeding purposes.

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I have made no public sale from this herd, and have sold only the surplus male increase;

The Home Circle.

EDEN.
It is an old legend divine,
The patriarchs tell us of old;
The tale of a garden divine,
Filled with the bliss of peace, we're told.

And how after sinning, the Lord
Sent forth from the great throne of right
The cherubim with flaming sword,
Clothed with the imperial might.

They say that passed long years ago,
And still in each man's breast to-day,
Lies an Eden of peace, or woe
Beneath the seed of yesterday.

And out from the Eden of rest
Our conscience with its flaming might
Sends us forth with a healing breast,
To the world of remorse and night.

WILL FAWLEY.

DEDICATED WITH UNPARALLELED
ADMIRATION TO LLOYD GUYOT.

Beloved man! wouldst vainly strive to lessen
logic's force, to check the onward flow of truth, resistless
in its course?

Doest see the marvelous beauty of these pan-
tomime feet?

A telescope view, could scarce their wonders
half repeat.

Contrivance such, might outward beauty's
transient state explain;

Inward beauty's source, would unre-
vealed, her secret still retain.

Illogic, senseless, cruelest joke, hast per-
petrated clear, (e)

In it no logic, joke, no sprightly wit, could
ever appear.

Well might true logic scorn such wit as thine,
so very tame,

Endignant spurns the man, that would degrade
her Attic name.

Beloved man! who wouldst exalted poet's
art essay,

And in the endeavor, folly's most ignoble part
display (b)

And thus thy joke, has neither wit, nor logic, in
its train,

Who then with Horace, could his face from
laughter's grin restrain?

REV. GEO. A. WATSON.

(a) See RURAL WORLD October 25 and
April 24.

(b) —I judge long you'll try
Convincing that she laughs? but a sigh!

Or, failing that, etc. The tenth line repre-
sents me as convincing that laughter is a
sigh, and takes with a portion of the preced-
ing line, it supposes that my trial has pro-
duced conviction, the beginning of the 11th

line denies this, "or, failing that," Lloyd

Guyot: a little more grammar; less poetry or
more.

REV. GEO. A. WATSON.

Bread and Butter.

It is interesting to note the progress
made in various lines of industrial art.
There is a marked concentration of capi-
tal and skill in the production of an end-
less variety of manufactured articles.
Every new thing that is discovered or
invented, or a new process, better or
cheaper, at once attracts capital and
skilled labor, and arrangements are made
for making said articles on a large scale,
with the aid of improved machinery.
This is true of every conceivable article
that is used among civilized people,
even such simple and apparently insigni-
ficant little things as pins, buttons,
matches, thread, hairpins, nails, etc.,
and yet, how essential they all are, how
well they fulfill their respective pur-
poses. These "little things" were once
made "by hand," by individual workers
in their own shops; now they are
manufactured by wholesale, in large
mills or factories, by hundreds of skilled
workers.

A hundred years ago, in the days of
our forefathers, (perhaps I ought to say
our "foremothers") many articles of
clothing were made of "homespun"—
wool clipped from the sheep's back,
cleaned, spun and wove into cloth, cut,
and sewed into garments—all done "by
hand," with the aid of such crude imple-
ments as existed in those days, and all
done without going outside of their own
family circle for help. Such a thing is
impossible to-day. There is such a
sharp competition for superiority in
quality, cheapness of cost, and rapidity
of workmanship, that men learn to con-
centrate their effort to doing one thing
well. Nowadays if a man is called to
be "jack-of-all-trades," he is also said to
be "boss of none."

With the exception of fresh fruits and
vegetables, which require no special
preparation for the table, there is scarcely
an article of commerce but goes
through some process of manufacture.
So we have soap and sugar works, can-
ning establishments, pickling concerns,
dryings houses for surplus fruits and
vegetables, packing houses for beef and
pork, and so on, ad libitum. All the
products of the soil undergo to a greater
or rather of concentration, by which the
waste or less valuable part is separated
from the more valuable, and both pre-
pared for their respective consumer.

"Bread" is called the "staff of life";
yet it is a manufactured article, and has
been for centuries. It is only within the
last half century, however, that "bread"
has become a product of manufacture,
and only during the past ten years, when
creaneries were spreading thick and far
and wide, over these Western lands, has
it acquired its rank and its right to be
called a "manufactured article."

One of the most interesting and in-
structive ways for enjoyment by those
who have the leisure, is, to visit the vari-
ous mills, factories, and other establish-
ments, and observe the countless
processes through which the raw mate-
rials pass, till it comes out perfected,
ready for use; and, above all, the won-
derful machinery, the accuracy, the ra-
pidity, the almost human-like intelli-
gence of the various machines they keep
so skillfully at work.

Doubtless there are many who have
never been made of a garment, and as
the writer is not a whatif family, who
happily, he volunteers to act as
"guide" to those of his readers who de-
sire to learn of the mysteries of making
creanery butter.

The first question that might naturally
rise is, What is butter? Well, we don't
know, and as we are not writing a scientific
dissertation on theories, we shall
not attempt to answer. The next question
is, What is butter made from? Why
butter is made from cream, and cream
rises from milk, and milk is that won-
derful fluid, the first product of the first
"machine" in the process of butter-
making. This "first machine" is the
cow, the most important machine in the
whole business—for without the cow
there would be no cream, no milk, no
cream; no cream, no butter. So there
is the first and chief machine of all,
of so wonderful a constitution, that no
sensitive genius can possibly find a sub-
stitute.

A small boy from the city had been in
the country visiting, and on his return
he married to his mamma to tell what he
had seen; he tried to teach her how to
make butter, she said, "The first thing

you get a cow—" but we need not quote
further; that boy told the greater truth
than he knew. The cow is the founda-
tion of all success in agriculture, in general
farming, and in stock-raising. The
boundless plains; and grass is the bed-
rock on which this foundation rests, for
grass is the "raw material" which this
living "machine" converts into milk,
cream and butter. The greener the grass,
the more freely the stream of golden
wealth flows into the milk-pail, and mys-
teriously become transformed into cakes
of golden butter.

Well, now we have our cow, as the
little boy said. Much might be said
about the feed or feeding of this
machine, of the transformations of grass
into milk, and of the extraction of the
milk. Many are the books that have
been written respecting this wonderful
machine, the raw material she consumes,
and the products of her unconscious
instinctive skill. There is much of poetry,
also, connected with this subject, when
you get a cow—

"The cheerful milkmaid takes her stool,
And sits and milks in the twilight cool."

This reminds me of a couple of pictures
that I once saw. Two farmers each
thought they owned a certain cow, so
they quarreled and had a lawsuit. One
picture showed the farmers holding on
to the opposite extremities of the poor
old cow, while the lawyer sat down and
milked the cow! The second picture
showed the cow's horns and tail had
broken off. That was all the foolish men
had to do to prove their quarrel, while the
lawyer had the cow as well as the milk.
 Beware who milks your cow!

The "outman" goes from house to
house, gathers the cream and delivers it
at the creamery. Here it is poured from
the large cans into the "cream vat"
through a fine wire strainer. The size
and capacity of the vats, churus, etc.,
varies in different creameries. The most
common size is that holding 300
gallons. These vats have a reservoir be-
neath and around the sides for holding
water. The cream must be of a certain
temperature for churning; if too cold, it
must be warmed, and this is done by ad-
mitting steam to the water underneath;
if too warm, it must be cooled, either by
ice or cold water. The proper tempera-
ture for churning is 62°—it requires long
practice to tell just when cream is
properly loaded. The right amount of
acid or sourness. When cream is
too cold it will "swell" in the
churn, and be an unreasonably long time
coming. We well remember once hav-
ing "swelled" our churn too full of cold
cream; it swelled till the churn was
nearly filled; though the churn revolved,
yet it did not "churn." For over seven
hours we held wearily to our task—
bound to subdue that obstinate cream.

In oriental countries a very primitive
method of making butter is in vogue—the
same manner to-day as it was in the
early ages. A "bottle" of skin or leather
being filled with cream, was placed on a
sheet, each corner grabbed by a person,
and all gave it a peculiar shake at the
same instant, which sent the "bottle"
into the air, and the moment it touched
the ground it was used as a stool, and
till the "churning" was done. During
the lapse of ages innumerable changes
have taken place in the matter of churning
and churning, till at last, in this age of
invention and improvement, we come to
acknowledge that the principle of that
primitive bottle churn is correct; that is,
churns without any mechanical fixtures
inside give the best results.

Well, now let us suppose our churning
is "loaded" and at work at the rate of
45 revolutions per minute; while we are
waiting for the butter to "come," let us
step into the other room to watch the
re-working of yesterday's butter. We
have here a circular "table" some five
feet across, which revolves slowly, pass-
ing under two tilted rollers; this table
is to one or two feet of water or
brine flowing from the works, and
quantity of butter is laid on the table,
the machine set in motion, and the butter
passes under these rollers; the workman
with his ladle turns and doubles it over,
and under the rollers it goes, again and
again, till done. Now the tubs, which
have been soaking for nigh a day, are
brought in, salt rubbed inside, and the
butter packed down solid; the top of tub
of butter is smoothed, a clean piece of
"buttermuslin" is neatly laid on, dampened,
a layer of salt spread evenly over it; the
cover is next fitted on snugly, and fastened
by tacking on three sides.

Mischiefous MARY GLENDOLEN.

But to return. There is a large tank
above the churns from which cold water
is conducted into them to wash the butter.
The butter comes in a granulated condi-
tion, like coarse sugar,—sometimes looks
like gold.—"Bromophic pills," so the
water passes all through it, cooling and
washing it thoroughly. Some salt is
sprinkled and the salt is by

country, but we have a good stock range
and lovely timber, plenty of springs of
clear cold water, beautiful wild flowers,
and can grow all fruits and vegetables
that will grow in this latitude. Ozark,
the country in which I live, is a driving
country, but the city friends in the Circle
could be here and hear the birds sing,
they hold a grand concert every morning
and evening since the mocking birds have
come.

Alma Balsiger, I too am a farmer's
daughter, and all the way I have to earn
money is to sell calves in the fall, and as
I spend that in a short time, I should
like to earn some in the spring also.
Will you please send me your address on
a postal, I should like to correspond with
you about those ducks.

FANNY FROST, I am sorry to hear that
last year is a fraud, because all of my
hopes of getting married lay in leap
year. Oh, dear! what is a poor old maid
to do when the last prop is taken from
her to stand?

ELIA COOK, I was pleased to receive
your letter in the R. R. of May 1st, as
my mother was born in Otego county,
also my grandmother, (who is now 77
years old) and I have cousins still living
in Delaware county.

TUSTA-NUGGET-MATHALA, I would rather
see you ride the horse that dances the
round dance, than to ride it myself, but
if you have any good pacers I should like
to try them. You say that I lead you to
suppose that I am a good rider. I may
not be a graceful rider, but I never get
thrown. I should like to hear more
about those ponies and the Indian Territory
also, so please write again.

IF THE MEMBERS of the Home Circle
would like to sell calves in the fall,
and he was about to return to his engine
when his eye caught sight of a peculiar
appearance at the joint of the rail next
to him. Brushing the accumulated snow
away, he looked a moment, and then
uttered an exclamation of horror.
The rails on both sides had been un-
smoothed and would have turned over the
instant the engine touched them. What
inspired this attempt at train-wrecking
is unknown, but it was the accumulated
confidence of some prisoners who were
on the train, I suppose, in the confusion
of an accident, to deliver their friends.

ENGINEER JOHN DONOHOE, of Albany,
to whose wonderful instinct was due the
salvation of the train, when asked by the
writer why he stopped his engine, said:

"I can't tell why. I only know I felt
something was wrong."

"Do you have these feelings often
when upon the road?" continued the
writer.

"No, very seldom, although for the past
twenty years I have been in a condition
to feel apprehension at almost anything."

"How is that?" "Why I have been a victim of one of
the worst cases of dyspepsia ever known.
I have not been cured by any of the best, as
I like thousands of others, I am compelled
to live a life that is not easy. Indeed,
when it first began I had only a loss of
appetite, a faint feeling that would not
go away and a bad taste in the mouth,
but I finally got those terrible craving
and gnawing feelings that make life so
unbearable and are known as general
debility."

"What did you do?" "I tried physicians until I became dis-
couraged. I gave eight different ones
fals tests but none of them benefited me.
I then tried proprietary medicines, but
they failed, likewise. It looked pretty
dark for me so far as anymore peace or
enjoyment in this world were concerned and I became terribly discouraged."

"You certainly do not look that way
now?" "Oh, no, indeed, I am in perfect health
and I am entirely able to work. Indeed,
when it first began I had only a loss of
appetite, a faint feeling that would not
go away and a bad taste in the mouth,
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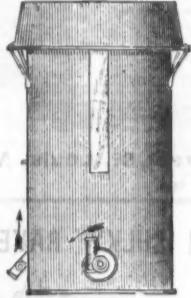
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The Dairy.

Officers Mississippi Valley Dairy and Creamery Association.
President—Norman J. Colman, St. Louis.
Vice President—Jos. W. Drury, Waterloo, Ill.
Second Vice President—Joseph E. Miller, Belleville, Ills.
Treasurer—Wm. N. Tivy, 424 North Second St. Louis.
Secretary—Joseph W. Sheppard, 600 Olive street, St. Louis.

The Cooley System.



These engravings illustrate the new system of setting milk in submerged cans. The cans are twenty inches deep and eight and one-half inches in diameter, the covers are fastened down, and the air under the rims of the covers prevents the passage of any water into the cans. The cans are set in the water coolers, which are lined with metal, and fitted with inlet and overflow for using flowing spring water. These coolers are thoroughly built, with tight-fitting covers to exclude warm air, and retard the melting of ice when used to maintain a uniform temperature. The water cooler is set in the front of the apparatus, in order that the temperature may be ascertained without raising the cover. This apparatus is very simple, dispensing with costly milk rooms, as but little room is required, and is the only system that will produce uniform results; and until some uniform system is adopted, there will be as many grades of butter in the market as there are makers.

If the temperature of the water in the coolers is kept at 45 to 55 degrees in the spring and summer, and at 40 to 45 degrees in winter, the cream will rise in twelve hours, in which case only cans enough to hold a single milking are required, or one-fourth the capacity needed with any of the patent open-can systems of setting milk. The submerged system of setting milk is devised from simple space of time, a uniform quality and quantity of butter through hot weather, which retains all the rich flavor of new milk, possesses superior keeping qualities, is firm in texture and uniform in color, free from casein or sour milk specks, and possessing a peculiar rich flavor, which imparts much pleasure in eating. "Gilt-edge" butter can only be made from cream taken from sweet milk.



The submerging of milk in cold water tends to prevent the development of odors. The covers of the cans fit loosely, and the top of the milk in the cans is in close communication with the cooling influence of the water. Any odors in the milk are in the form of light, volatile gases, which quickly rise to the surface, and are absorbed by the water beneath the cover. It is well known that cold water will readily absorb any odor or taint from any other liquid in a warmer temperature. Milk will also penetrate each other, and this principle is practically illustrated by the Cooley process. To facilitate this process, and enable the water to more readily draw out the odors from the milk, the covers are raised upon wires, as shown in the engraving.

For further particulars address John Boyd, 199 Lake St., Chicago.

The Dairy Business.

The past year has been favorable for the dairy business, says the *Chicago Globe*, writing of the trade of that city. The weather was such as to ensure an abundance of feed of good quality. Producers sent their goods freely to market, receiving fairly remunerative prices. We have not at hand the total receipts of butter, but those of cheese reached the enormous aggregate of 47,150,000 pounds.

VALUE OF RECEIPTS.

The first selling value of the total receipts of produce in this city for 1883, was nearly as follows:

| | |
|--------------------------------------|---------------|
| Breadstuffs | \$101,900,000 |
| Live Stock | 201,250,000 |
| Provisions | 21,600,000 |
| Bacon, Ham and Wool | 45,750,000 |
| Seeds, Potatoes, Salt and Broom Corn | 16,700,000 |
| Hay, Poultry, Green Fruits, etc. | 14,800,000 |
| Total Value | \$402,000,000 |

In 1882. \$39,000,000

In 1881. \$97,500,000

In 1880. \$12,000,000

A Dairy Exchange.

MOVEMENT TO ENCOURAGE THE PRODUCTION OF CHEESE AND BUTTER.

"There are now about forty large creameries, of an average value of from \$6,000 to \$10,000, in this State," said Joseph W. Sheppard, Secretary of the Mississippi Valley Dairy and Creamery Association, to a *Globe-Democrat* reporter yesterday. "Sixty or more small creameries, that will cost from \$3,000 to \$4,000 each, are contemplated, and will doubtless be in operation within a year. The magnitude of our butter trade will become apparent when I state that our local dealers handled between 10,000,000 and 12,000,000 pounds of butter last year. There is no reason why these figures should not be doubled within two years. I have positive knowledge of a large butter and cheese shipment from Chicago and Elgin, Ill., to New Orleans, Memphis, Vicksburg, Mobile and other Southern cities. The trade of those cities could be secured to St. Louis if an effort was put forth by our butter and cheese men. We are located in the blue grass belt, and have very little

winter, and when the creameries in Illinois, Iowa and other states are now shut down on account of severe cold weather we can turn our creameries. It is in winter time that the highest prices are obtainable. Our laws against the manufacture and sale of artificial and adulterated butter will give our dairy products a better standing in the market than the dairy products of any other State in the Union. I am now collecting facts which I shall present to the association at a meeting to be held late this fall or early in the winter. In about a month I will start on a tour of the different states for the purpose of examining creameries and consulting with the officers and members of Dairy Boards. It is expected that after I submit my report a Butter and Cheese Exchange will be established in the city, from which I anticipate much good will result, not only to the dairy interest of the State, but to the business interest of the city."—*Globe-Democrat*, May 16.

Brief Rules for Dairying.

The following rules are copied from a pamphlet just issued by Dr. J. B. Marquis, of Norwich, N. Y., describing his rules of dairying.

BUTTER MAKING.

1. Decide your line of dairying—butter, or cheese, or both.

2. Select your cows according to the line of dairying chosen.

3. Teach cows separately, and reject all not suited to your line of dairying, or that fail in quality or quantity of milk.

4. Feed liberally, have pure water always accessible, and keep a mixture of equal parts of salt, ashes and sulphur within reach of the cows.

5. Be sure your stables are thoroughly ventilated, remove all droppings immediately, and freely use absorbents and deodorizers—such as saw dust, dry earth, or cut straw, never omitting a liberal use of plaster.

6. Be scrupulously clean in every particular, both in keeping the cows and in milking and handling the milk.

7. By all means, avoid exposure of the milk, or the milk will not suffice.

8. Air and cool your milk as fast as possible down to at least 70 degrees if you carry it any distance to a factory or creamery. Do the same if you make it into cheese at home, though you need not go below 80 degrees, if made up immediately.

9. When milk is kept over night to be carried to a factory, the temperature should be reduced as low as 60 degrees.

10. If milk is set at home for cream, sooner it can be set after milking and the higher the temperature the better, as cream rises best and almost wholly while the temperature is falling.

11. Never reduce the temperature below 40 degrees, as a lower temperature has a tendency to chill the product and injure its keeping quality, and it also expands the water, rendering its relatively greater density less instead of greater.

12. Skin as soon as the cream is all up, or so much of it as you wish to take from the milk.

13. Keep your cream if not churned immediately, at a temperature of 64 degrees, or below, but not below 40 degrees.

14. Churn at such a temperature between 55 and 64 degrees, as experience shows you is best. Conditions vary the temperature for churning.

15. Stop the churning when the butter is in granules about the size of wheat kernels.

16. Draw off the buttermilk and wash in clean water before gathering the butter, until the water runs clear. If one washing is in brine, it is all the better, as brine coagulates the cheesy matter, which dissolves and is then washed out.

17. Salt to suit customers, using none but refined salt made for dairy purposes. The best American salt is as good as any.

18. Put up in such packages as are denoted by your market. If for long keeping, pack in firkins, set in a cool sweet place, and keep the butter covered with brine.

19. Milk for cheese making—whether whole or partly skimmed—should be perfectly sweet.

20. Set your milk at a temperature of 84 degrees, or above. Rennet is most active at 98 degrees, or blood heat, above which temperature should not be much raised. A temperature of 140 degrees will kill the rennet.

21. Add rennet enough to make a firm curd in 30 minutes or an hour.

22. Cut the curd as soon as it can possibly be done without waste, and cut fine and finish at once.

23. Keep the temperature as evenly at 88 degrees as possible, until the curd is fit to dip and salt. Cheddar or cook in the whey, as preferred.

24. Practice alone can teach when to dip, something depending on whether a soft or firm cheese is desired.

25. The cheeseing process depends a good deal on the relative per cent. of water to casein. If there is too little water the cheese will cure slowly and be dryish, and have little flavor. If there is too much water, destructive fermentation will set in and the cheese rapidly decay, if it does not sour and leak.

26. An even temperature is indispensable for curding—as low as 65 to 70 degrees for whole milk cheese, and as high as 75 to 80 degrees for skinned—according to the degree of richness.

CLEANLINESS.

27. It is not possible to be too particular about cleanliness. But cleanliness, Governor Seymour says, is a comparative term, and what is clean to one is dirty to another.

28. Carefully brush the cow's udder—if it is not soiled, wipe before milking.

29. Keep all hairs and loose dirt out of the milk, that no filth may dissolve in it. No strainer can take out what is dissolved.

30. Use a fine soft, cloth strainer before the wire strainer.

31. Keep your milk away from all contact with foul or disagreeable odors, as the fats rapidly absorb all odors and impart them to the product.

32. Wash in tepid water every dish, implement or utensil that comes in contact with milk or its products. Then scald in boiling water or with steam; after which, rinse thoroughly in cold water, and expose them to pure air (and sunshine if possible) until needed for use.

A New York dairymen writes: "You fellows out in Missouri are doing us on the hip. You are making fat on good butter as we can. Our last year's cost was \$75 to \$150 per acre; our cows cost \$75 to \$75, and these confounded railroads bring your butter all the way from Missouri and lay it down in New York or Boston just as cheap as they will take ours; while your land out there, I understand, can be bought from \$20 to \$50 per acre. I feed my hogs nothing from early spring to late fall, and they are located in the blue grass belt, and have very little

Dairy Products.

DES MOINES, Ia., May 20.—The first regular sale of dairy products by the Des Moines Butter and Cheese Exchange occurred to-day. There was a large attendance, buyers being present from Chicago, Elgin, New York and Boston. The offerings were about 30,000 pounds of creamery. Prices ranged from 17 1/2 to 19 1/2c. The Eastern buyers were highly pleased with the quality of the butter offered.

What They Fear.

Oleomargarine Man—The people will ruin our business before long. Customer—What people?

The dairyman—"The dairyman?"

"The dairyman? In what way?" By getting laws passed?"

"Oh, no; we do not fear that."

"Then what is the trouble?"

"Well, you see, they make such bad butter."

What can that affect you?"

"People who get it think it must be spurious, and that gives oleomargarine bad name."—*Philadelphia Call*.

THE PIG PEN.

Hog Cholera—A Simple Remedy.

EDITOR RURAL WORLD: As I promised in my last, I shall proceed in this letter to tell you readers how we deal with the "hog cholera," one of the most prominent and fatal diseases swine are subject to—a disease that has puzzled the most learned scientific men of the day, and consequently I feel somewhat embarrassed on offering this quite simple remedy. Yet we all know that nearly all things are found to be quite simple after their discovery. However, in writing this of hogs and their management, I speak not only from my own experience and observations, but also from the experience of a man now in the seventy-fourth year of his age. A man who is recognized as one of the most successful breeders of swine in this part of the country, and one who has made hog raising his principal study and means of profit.

Yours truly,

C. T. DURR.

ONONDAGA, N. Y.

SMITH, MYERS & SCHNIER,

323, 325, 327 & 329 W. Front St.,

CINCINNATI, O.

Mention this Paper.

SULPHUR BATHS

In cases of eruptive diseases is well established.

Smith's Sulphur Soap produces the same effects.

ONONDAGA, N. Y.: I have travelled for three years for Messrs. Charles Scribner's Sons' Publishers, New York; I have used "Glen's Sulphur Soap" in every state of the Union, and my constant experience and my constant study has led me to the conclusion that it possesses all the qualities of a good soap, and that it is equally good for skin cleaning, as well as for the cure of skin diseases.

Yours truly,

C. T. DURR.

ONONDAGA, N. Y.

SMITH, MYERS & SCHNIER,

323, 325, 327 & 329 W. Front St.,

CINCINNATI, O.

Mention this Paper.

HUMPHREYS HOMEOPATHIC VETERINARY SPECIFICS

FOR THE CURE OF ALL DISEASES OF HORSES, CATTLE, SHEEP, DOGS, HOGS, AND POULTRY.

FOR TWENTY YEARS Humphreys' Homeopathic Veterinary Specifics have been used by Farmers, Stock Breeders, very small and Large Horse, Railroads, Manufacturers, Contractors, and others in every part of the country, and have met with great success.

HUMPHREYS' HOMEOPATHIC MED. CO., 109 Fulton Street, New York.

NERVOUS DEBILITY

HUMPHREYS' HOMEOPATHIC VETERINARY SPECIFIC NO. 28.

FOR THE CURE OF ALL DISEASES OF HORSES, CATTLE, SHEEP, DOGS, HOGS, AND POULTRY.

FOR THE CURE OF ALL DISEASES OF HORSES, CATTLE, SHEEP, DOGS, HOGS, AND POULTRY.

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FOR THE CURE OF ALL DISEASES OF HORSES, CATTLE, SHEEP, DOGS, HOG

St. Louis Amusements.

Tony Denier's Humpy Dumpty troupe is holding the boards at the People's this week.

The season at Ulrig's Cave will open June 3rd. The Ford Comic Opera Company will open in "Princess Ida," Gilbert and Sullivan's new opera.

The Stock Yards.

Weekly Review of the Live Stock Market.

The receipts and shipments for the week ending Tuesday, May 27th, were as follows:

| | Horses | Cattle | Hogs | Sheep | mules |
|-----------|--------|--------|-------|-------|-------|
| Wednesday | 246 | 246 | 1,177 | 1,757 | 134 |
| Thursday | 106 | 457 | 230 | 100 | |
| Friday | 276 | 438 | 1,198 | 169 | |
| Saturday | 186 | 534 | 1,177 | 177 | |
| Monday | 186 | 442 | 2,504 | 277 | |
| Tuesday | 186 | 442 | 2,504 | 277 | |
| Total | 10,811 | 31,848 | 8,817 | 624 | |
| Last week | 10,910 | 45,275 | 8,939 | 646 | |

Receipts.

| | Horses | Cattle | Hogs | Sheep | mules |
|-----------|--------|--------|-------|-------|-------|
| Wednesday | 648 | 1898 | 235 | 9 | |
| Thursday | 1286 | 3544 | 1425 | 115 | |
| Friday | 1286 | 3544 | 1425 | 115 | |
| Saturday | 1883 | 3893 | 194 | 281 | |
| Monday | 1842 | 6255 | 2210 | 185 | |
| Tuesday | 261 | 241 | 1028 | 42 | |
| Total | 8,376 | 21,164 | 7,768 | 889 | |
| Last week | 8,155 | 23,001 | 5,968 | 681 | |

Horses and Mules.

| | Horses | Cattle | Hogs | Sheep | mules |
|-----------|--------|--------|-------|-------|-------|
| Wednesday | 648 | 1898 | 235 | 9 | |
| Thursday | 1286 | 3544 | 1425 | 115 | |
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| Last week | 8,155 | 23,001 | 5,968 | 681 | |

Horses and Mules.

The demand for horses this past week was very unsatisfactory as a whole, though good qualities in instances sold fairly well. The Eastern markets were off and slow and affected the demand here very materially.

Values were about as follows: Common to native clipped \$3 00@5 00; common to choice Texas \$3 00@5 00; spring lambs \$2 25@2 75.

Sheep and Lambs.

The demand for lambs this past week was fair, and the moderate supply did not prove ample to meet all requirements. Many buyers had to curtail their operations. Prices were firm on all grades except common Texas lambs in liberal supply and quiet at \$0 60@6 50 per head. There has sprung up a light demand for lambs of 14 to 14 1/2 hands high, 4 to 8 years old. Good heavy lambs were scarce and wanted. Unbroke lambs

available were dull and weak.

Since 1860 the population of the United States has increased 65 per cent, while the increase in live-stock has been about 50 per cent.

It is claimed that the drive from Texas this season will be larger than usual, and will include about 450,000 head of young cattle to be driven and shipped to Kansas, Wyoming, Nebraska, New Mexico and Arizona—the most of them to fill contracts.

The commission charges at New Orleans for selling live stock is 3 per cent, making about \$30 on an ordinary car of Texas cattle at latest quotations.

The Canadian Stock Raisers' Journal says, the conditions of the admission of Canadian cattle into England, are enough more favorable than those for American cattle, to give the former an advantage of \$15 per head.

A number of ship owners engaged in the live stock shipment from Montreal, Canada, have been ordered to widen the space allotted to each animal, from two feet six inches to two feet eight inches.

The Indian Territory round up will commence on June 4. It is designed for the especial purpose of sweeping the ranges perfectly clean in one round, and is the only round up which will be given this season.

Forty-five cars have lately been loaded at El Paso, with native Mexican cattle, and are now en route to Denver. They will be unloaded at the Union Yards, and after being fed and rested, will pass on up to Wyoming. Forty more cars of Texas cattle will follow these.

A mammal shearing establishment, consisting of corrals, pens and sheds, for handling and shearing an immense number of sheep, with all necessary appliances, has been constructed at Hugo, Kan., by the Union Pacific railroad. There are 300,000 sheep within easy reach.

The use of blood as a food for cattle, has, it is stated, been the subject of experiment in Denmark by a chemist, who, as a result, has invented and patented a new kind of cake in which blood forms one of the chief ingredients. This new food is stated to be exceedingly nutritious and wholesome, and is eaten with avidity by all sorts of animals, and even by cows and horses, which have naturally a strong dislike to the smell of blood.

The Chicago Tribune relates the following remarkable coincidence: Something occurred yesterday which probably has no counterpart in the annals of the trade. Among the stock consigned to Adams & Burke, were two loads of cattle, one of which was shipped from Blair, Neb., and the other from Aplington, Ia. Each lot numbered 20 head, weighed identically the same—22,700 lbs., and were sold to different parties at the same price, \$6 20.

Cattle.—The financial fears have almost entirely abated and quite a well defined boom took possession of the cattle market the past week. Almost everything favored the selling interests and values advanced daily on the strength developed by other markets and even urgent demand from all classes of buyers here. The money stringency brought about lighter receipts and the demand not always satisfied, a brisk competition resulted which put prices up and sales were effected quickly, buyers understanding the situation as well as sellers, so that no trouble was found in making transfers. The arrivals of grass Texans were not very large but the few offered found ready sale at \$4 00@5 00. Corn fed Texans, however, were quite plentiful and sold to shippers and others at well advanced prices, the range for the week being from \$4 45 to \$5 50 averaging from \$9 2 to 10 2 1/2. Native cattle, however, met with the greatest preference, and large numbers changed hands for shipment at \$3 70 for lights to \$7 70 for choice heavy, the bulk of sales being from \$3 50@6 10 and \$6 15, as the number of really choice and prime steers was somewhat limited. Butchers' stock was in active request throughout the entire week and in many instances brought more than the original advance sales being made as high as \$5 50, but generally at \$4 40@5 00. While cows and calves bringing \$6 1. Good feeding cattle were generally in demand with sales at \$5 60, but stockers were slow with no sales worthy of special mention.

Business was satisfactory, though not large, the bulk of the trade being in butchers' cattle, which brought from \$5 37 1/2@6 05. Texans were quite plentiful, but only fair in quality, and sold only when good natives were not obtainable. The ruling rates continued firm at the following:

Exporters..... \$6 40 @ 6 75
Good to fair steers..... 5 50 @ 6 05
Fair to good..... 5 50 @ 6 05
Common to medium, nat. steers..... 4 70 @ 5 40
Fair to good Colorado steers..... 5 00 @ 5 75
Fair to good Texas steers..... 3 75 @ 4 40
Light to good stockers..... 3 75 @ 4 40
Fair to good feeders..... 4 50 @ 5 50
Native cows and heifers..... 3 00 @ 3 50
Cows, 1/2 to 1 1/2 years old..... 3 00 @ 3 50
Grass Texas steers..... 4 50 @ 5 00
Scalawags of any kind..... 2 50 @ 3 25
Milk cows with calves..... 6 00 @ 6 13 00

Hogs.—The market was very liberally supplied, and the trade experienced almost as large a boom as cattle, especially in Hogs, which almost absorbed the attention of buyers to the exclusion of heavy weights.

Packers alone taking the latter, while both shippers and shippers gave preference to the former. The following is a summary of the

week's business: The opening day—Wednesday—shippers were the leading buyers, and the receipts proving liberal the large number who desired to purchase were enabled to do so, and a liberal movement resulted at 5 10 for lights. Packers took only a few at \$5 40 with bulk at \$5 25, while heavy hams brought \$5 40@5 55. Thursday there was increased activity at stronger prices notwithstanding that other markets were off. Sales made at \$5 20@5 45, for Yorkers, and \$4 90@5 10 for lights. Packers took only a few at \$5 40 with bulk at \$5 25. While heavy hams brought \$5 40@5 55.

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